

Figure 1

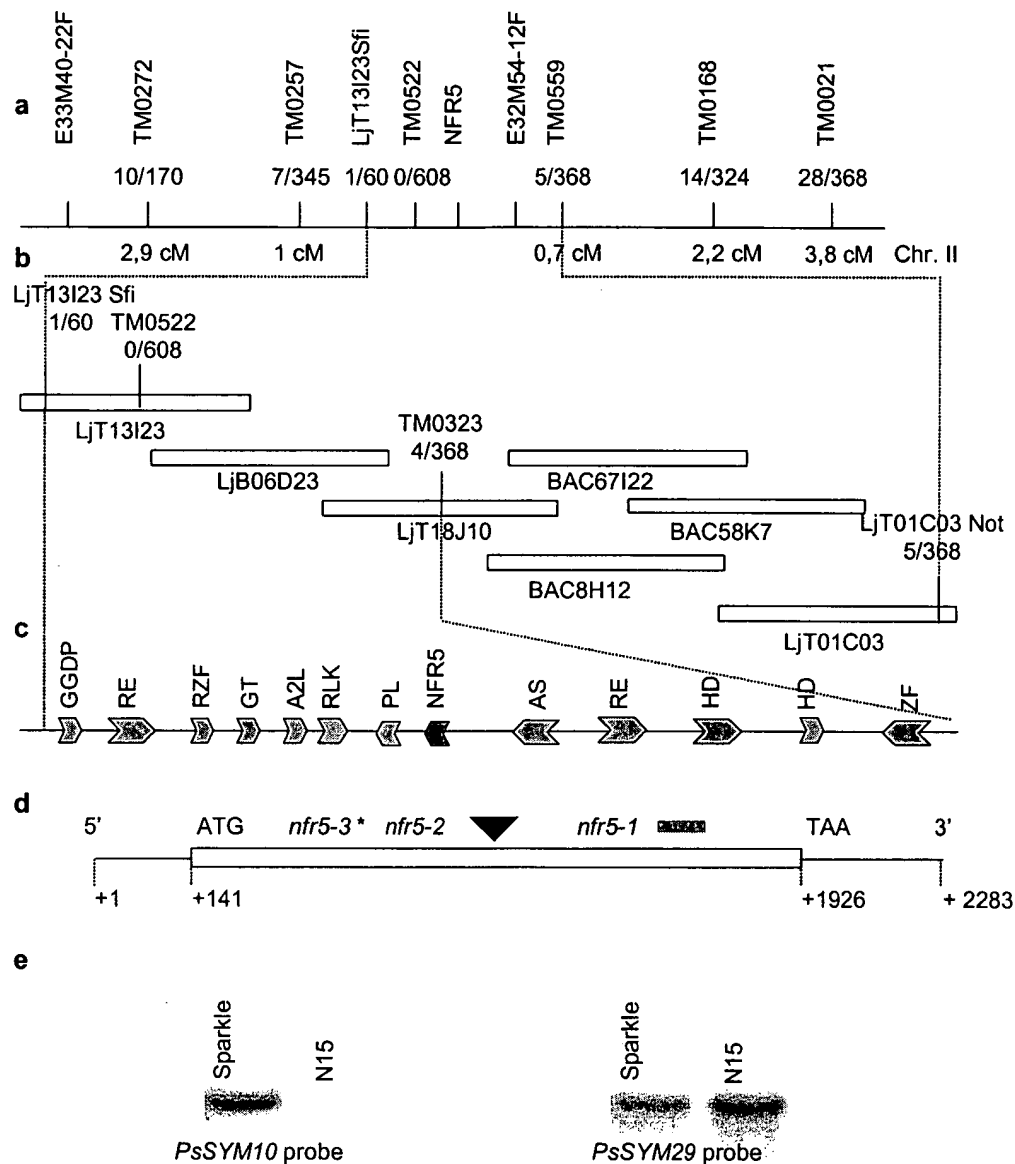


Figure 2

a



b

MAVFFLTSGSLSLFLALTLLFTNIAA	SP
RSEKISGPDFSCPVDSPSPSCETYVT	51 aa
* YTAQSPNLLSLTNISDIFDISPLSIARASNIDAGKDKLVPGQVLLVP	LysM1
VTCGCAGNHSSANTS	113 aa
YQIQLGDSYDFVATTLYENLTNWNIVQASNPGVNPYLLPERVKVFP	LysM2
LFRCRCPSKNQLNKGIQYLIT	180 aa
YVWKPNNDNVLVS AKFGASPADILTENRYGQDFTAATNLPILIP	LysM3
VTQLPELTQPSSNGRKSSIHLL	246 aa
VILGITLGCTLLTAVLTGTLVYVYC	TM
RRKKALNRTASSAETADKLLSGVSGYVSKPNVYEIDEI	KD
I MEATKDFSDECKVGESVYKANIEGRVVAVKKIKEGGANEELKILQKV	
II III NHGNLVKLMGVSSGYDGNCFLVYEYAENGSLAEWLFSKSSGTPNSLT	
IV V WSQRISIAVDVAVGLQYMHEHTYPRIIHRDITTSNILLDSNFKAKIA	
Via Vib NFAMARTSTNPMMPKIDVFAFGVLLIELLTGRKAMTTKENGEVVMLW	
VII IX KDMWEIFDIEENREERIRKWMDPNLESFYHIDNALS LASLAVNCTAD	
XI KSLSRPSMAEIVLSLSFLTQQSSNPTLERSLTSSGLDVEDDAHIVTS	
ITAR	595 aa

Figure 2

c

NFR5M1 52: YTAQSPNLLSLTNISDIFDISPLSIARASNTIDAGKDKIVECQVLLVP:98
SYM10M1 52: YFARSPNELLSLTNISDIFDMSPLSIAKASNTIEDKDKIVECQVLLIP:98
M.tM1 53: YRAQSPNELLSLTNISDIFENLSPLRIAKASNTIEADKDKIIEQCQLLVP:99
RiceM1 47: YRTQSPGELDLGNISDLFGVSRALIASANKLTTEDGVLLPCQPLLP:93

NFR5M2 114: YQIQLEDSYDFVATILMENLTNWNIVQASNPGVNPYLLPERVKVWFP:160
SYM10M2 114: YITKLGDNYEIVSITTSYONLNYVEMENFNPNLSPNLLPPEIKVWVP:160
M.tM2 115: YSHKQCDNEEFILSITTSYONLNYLEFKNFNPNLSPNLLPLDTKVSVP:161
RiceM2 109: YPIRPRDIEFGLAVIAFENLIDFMLEELNEAAEAIRLEPWQEVWVP:155
VolvoxM2 106: YTIQPCDIEFWAIAQR.RG..ITVDVIQSLNPGVNPPEARLQVCQVINMP:149
Pfam 1: YIVKKGDILWKIARR.VG..ISVSELKSLN.GLSSDNLVVCQKLIKIP:43

NFR5M3 181: YVWKPNNDNVSLVSAKFGASPADITENRYGODETAATNLPIILIP:224
SYM10M3 181: YVWQANDNVTRVSSKFGASQVDMFTEN..NQNFTASTNVPIILIP:222
M.tM3 182: YVWQDNDNVTLVSSKFGASQVEMIAEN..NHNFTASTNRSVLIP:223
RiceM3 176: YVWQEGDDVSVVSALMNASAANIAASNGVAGNSTIFATGOEVLP:219

d

	VII	VIII	IX
Cons	...DFG.....	APE.....	D.W..G
Smart 195:	KIADFGLSR..DLYSDDYYKVKGGKLP	IRWMAPESLKEGKFTSKS	SDVWSFG:248
Arab 500:	KIANGVARIILDEGDLDLQLTRHVEGTQGYLAPEYVENGVI	TSKLDVEAFG:	550
NFR5 448:	KIANGFAMARTSTN.....	PMMPKI	DVEAFG:472
SYM10 449:	KIANGFSMARTSTN.....	SMMPKI	DVEAFG:473
M.t 450:	KIANGFSMARTSTN.....	SMMPKI	DVEAFG:474
Rice 476:	KLSNFSIAKPAAMVD.....	AAATSS	DVEAFG:502

Figure 3

Lotus 1: M VFFLECSLSLPIPLT LFLTNIAARSEK S PDECPVDSPPSCETVYVTA SPNLSL NISDIF ISEPLIARA: 79
Pea 1: M IFFLECSLSLPIPLT LFLTNIAARSEK S PDECPVDSPPSCETVYVTA SPNLSL NISDIF ISEPLIARA: 79
M.t 1: MGAFFLECSLSLPIPLT LFLTNIAARSEK S PDECPVDSPPSCETVYVTA SPNLSL NISDIF ISEPLIARA: 80

Lotus 80: SNID GRD KLA QALLIPVTCCGACMA SANTSCIO GDS DFA TLVEMLTNNVQASNEGVNFFLLPERKVA F:159
Pea 80: SNID GRD KLA QALLIPVTCCGACMA SANTSCIO GDS DFA TLVEMLTNNVQASNEGVNFFLLPERKVA F:159
M.t 81: SNID GRD KLA QALLIPVTCCGACMA SANTSCIO GDS DFA TLVEMLTNNVQASNEGVNFFLLPERKVA F:160

Lotus 160: PLFCPCPSKNQL KGIQ LITVWKPNVVS VSAKEGASPA I ENRYC DTAATNL LIPVTLPE OPSSNGR:239
Pea 160: PLFCPCPSKNQL KGIQ LITVWKPNVVS VSAKEGASPA I ENRYC DTAATNL LIPVTLPE OPSSNGR:237
M.t 161: PLFCPCPSKNQL KGIQ LITVWKPNVVS VSAKEGASPA I ENRYC DTAATNL LIPVTLPE OPSSNGR:238

Lotus 240: K S IHLVILGILG TLLTAVLTG LVVYVCRKKNLNRAS ETADKLLSGVSGVSKPNVYE DEIME TKDPS:318
Pea 238: KNST KPI FI GILG VVVLTL LVVYV K LNR SL ETADKLLSGVSGVSKPNVYE DEIME TKDPS:317
M.t 239: KSS N LI GI LGS ILVLT LVVYV K LNR S ETADKLLSGVSGVSKPNVYE DEIME TKDPS:318

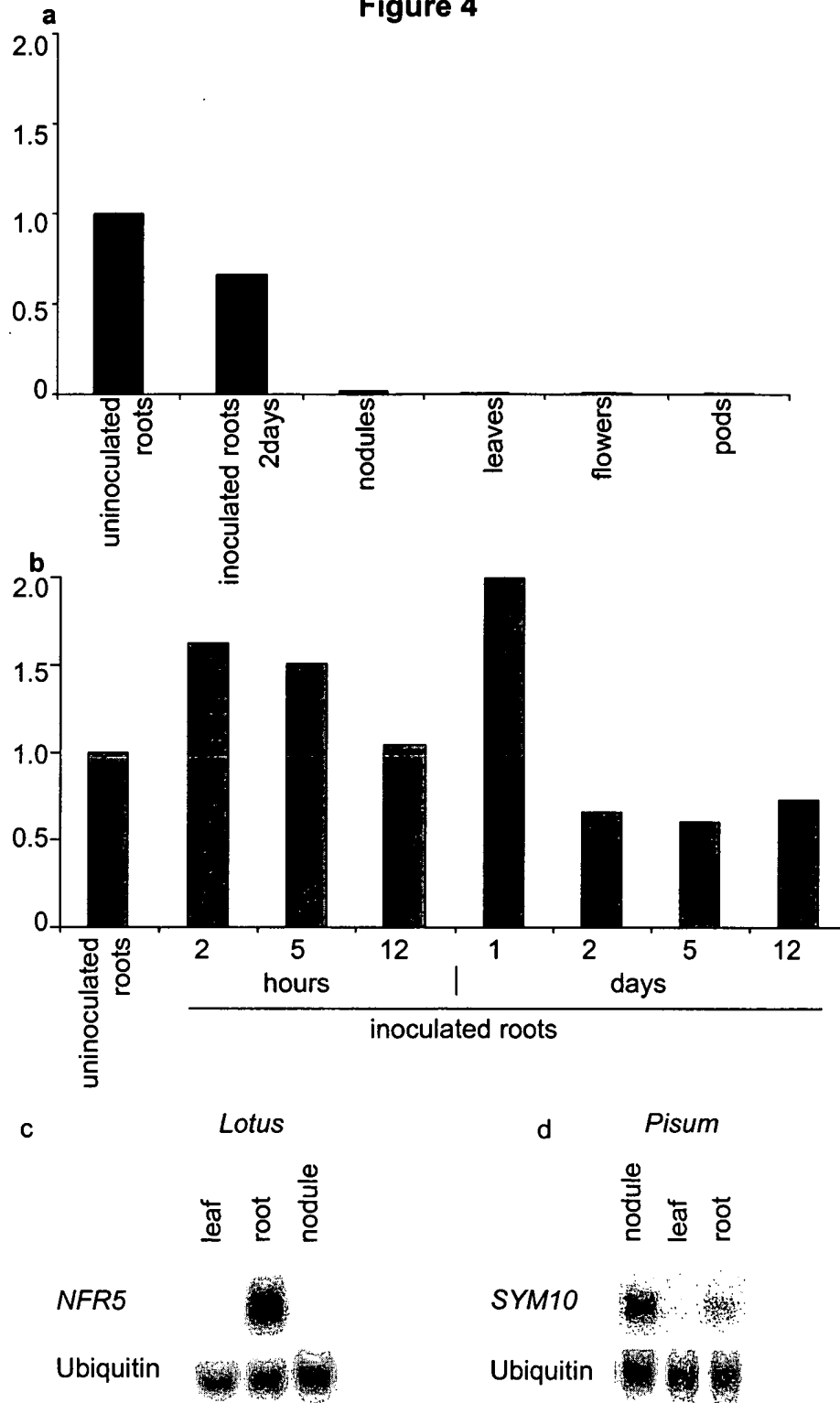
Lotus 319: ECKVGESVYKANI GRV AVKKIK A EELKILQKVNHGNLVKLMGVSS GNCFLVVEYAENGSLAEWLFSE SGT:398
Pea 318: CK GESVYKANI GRV AVKKIK A EELKILQKVNHGNLVKLMGVSS GNCFLVVEYAENGSLAEWLFSE SGT:396
M.t 319: CK GESVYKANI GRV AVKKIK A EELKILQKVNHGNLVKLMGVSS GNCFLVVEYAENGSLAEWLFSE SGT:397

Lotus 399: EN SLTWSQRIS A DVA GLQYMHETYPRIIHRDITTSNILL SNFKAKIANFAMARTSTN MMPKIDVFAFGV L:475
Pea 397: N SLTWSQRIS A DVA GLQYMHETYPRIIHRDITTSNILL SNFKAKIANFAMARTSTN MMPKIDVFAFGV L:476
M.t 398: N SLTWSQRIS A DVA GLQYMHETYPRIIHRDITTSNILL SNFKAKIANFAMARTSTN MMPKIDVFAFGV L:477

Lotus 476: TELLTG KA TT ENGEVW LWKD W IFD E NREES RKWMDP LENEY IDNALSLASLAVNCTADKSLSRP AET:555
Pea 477: TELLTG KA TT ENGEVW LWKD W IFD E NREES RKWMDP LENEY IDNALSLASLAVNCTADKSLSRP AET:556
M.t 478: TELLTG KA TT ENGEVW LWKD W IFD E NREES RKWMDP LENEY IDNALSLASLAVNCTADKSLSRP AET:557

Lotus 556: VLSLSLTCOSSNFTLERSLTSGLDDEDDAHVTSIAR:595
Pea 557: VLSLSLTCOSSNFTLERSLTSGLDDEDDAHVTSIAR:594
M.t 558: VLSLSLTCOSSNFTLERSLTSGLDDEDDAHVTSIAR:595

Figure 4



a **Figure 5**

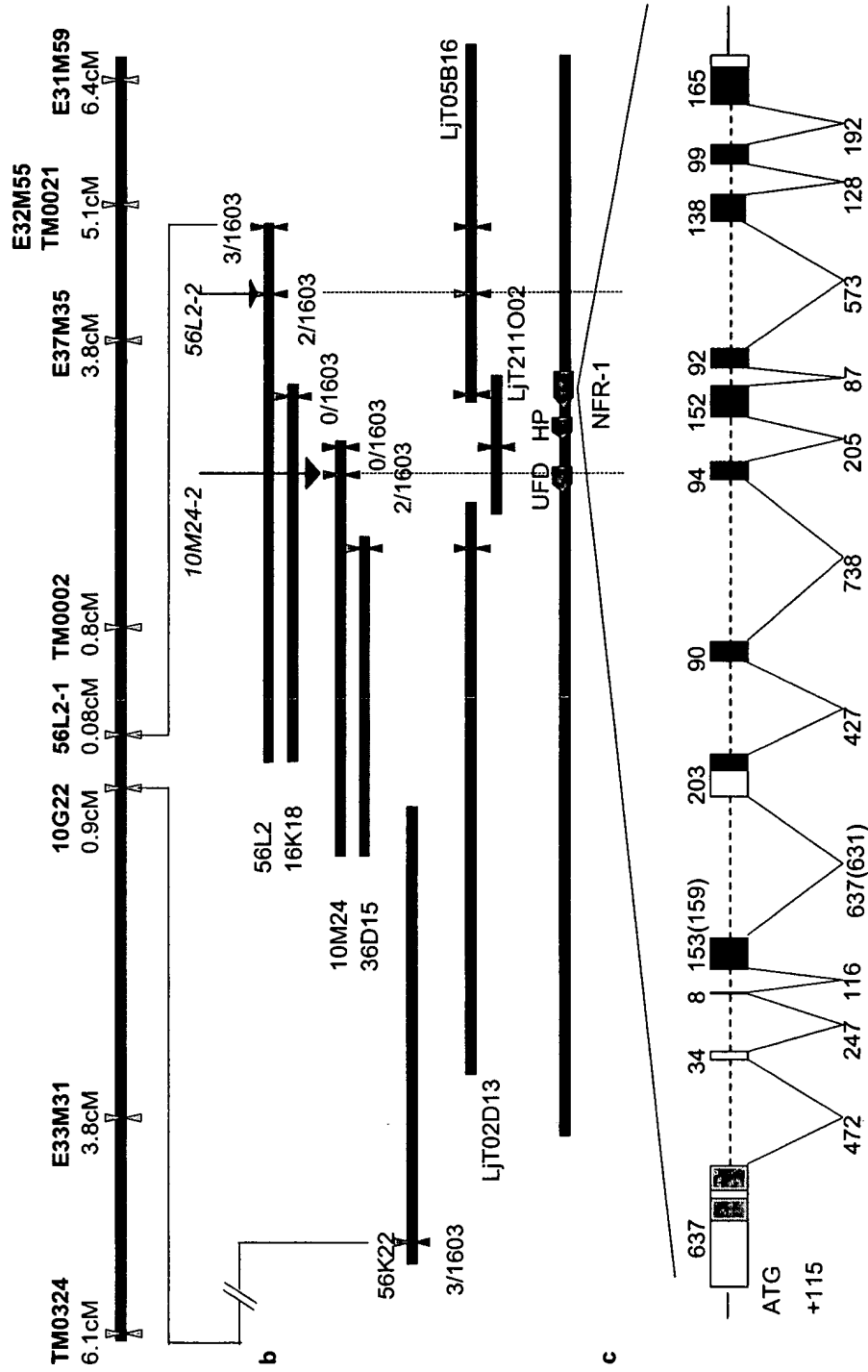


Figure 6

a

MKLKT GLLLF FILLGH	SP
VCFHV ESNCL KGCDL ALASY YILPG VFI LQKIT TFMQS EIVSS NDAIT S	
YNKDK ILNDI NIQSF QRLNI PFPDCIGGEF LGHVF E	103
<u>YSASKGDTYETIANLYYA</u> NLTTV DLLKR <u>FNSYDPK</u> NI PVNAKVNV T	LysM1
VNCSCGNSQV SKDYG LFI T	168
<u>YPIRPGDTLQDIANQSSLDAGLI</u> QSFNP <u>SVNFSKDS</u> GIAFI P	LysM2
GRYKNGVYVP LYHR	224
TAGLA SGAAGGISIA GTFVL LLLAF CMY V	TM
RYQKK EEEKA KLPTD ISMAL STQD (GN) ASSSA EYETS GSSGP GTASA T	
GLTSI MVAKS MEFSY QELAK ATNN	322 (3 24)
FSLDN KI <u>QGGFGAVYYAEL</u> RGKKT <u>AIKKMDVQ</u> AST <u>EFLCELKVL</u> T HV	
I II I II	
HHLNLV <u>RLIGYCEVG</u> SLFLV <u>YEHIDNG</u> NLGQY LHGSG KEPL <u>PWSSRVQIA</u>	
IV V VIa	
<u>LDAARGLEYI</u> HEHTVP VYI <u>HRDVKSANI</u> LIDKNLKG KVAD <u>FGLTKLI</u> EVG	
VIa VIb VII	
NSTLQ <u>TRLVGTFGYMPPEYAQYG</u> DISPK <u>IDVYAFGVVLFE</u> LISAK NAVLK T	
VII I * IX	
GELVA ESKGL VALFE EALNK SDPCD ALR KLVDP RLGEN YPIDS VLKIA QLG	
*	
RACR DNPLLRPSMRSL WALM TLSSL TEDCD DESSY ESQ TLINL LSVR*	
XI	

b

SMART0257	YTVKKEDSSSIARRIIVSMLLENN - LIDNLQVQKLP
NFR1M1	1YPIRPGDTLQDIANQSSLDAGLIQSFNP - SVNFSKDSGIAFI P-208
A21630-M1	YPIRPGDTLQDIANQSSLDAGLIQSFNP - SVNFSKDSGIAFI P-211
SMART0257	YTVKKEDSSSIARRIIVSMLLENN - LIDNLQVQKLP
NFR1M2	1YPIRPGDTLQDIANQSSLDAGLIQSFNP - SVNFSKDSGIAFI P-212
A21630-M2	YPIRPGDTLQDIANQSSLDAGLIQSFNP - SVNFSKDSGIAFI P-85
BAB89226-M2	YTVKKEDSSSIARRIIVSMLLENN - LIDNLQVQKLP
VolvoxM	4YTIQEDFWIAQRITTVIVSMLLENN - LIDNLQVQKLP

Figure 7

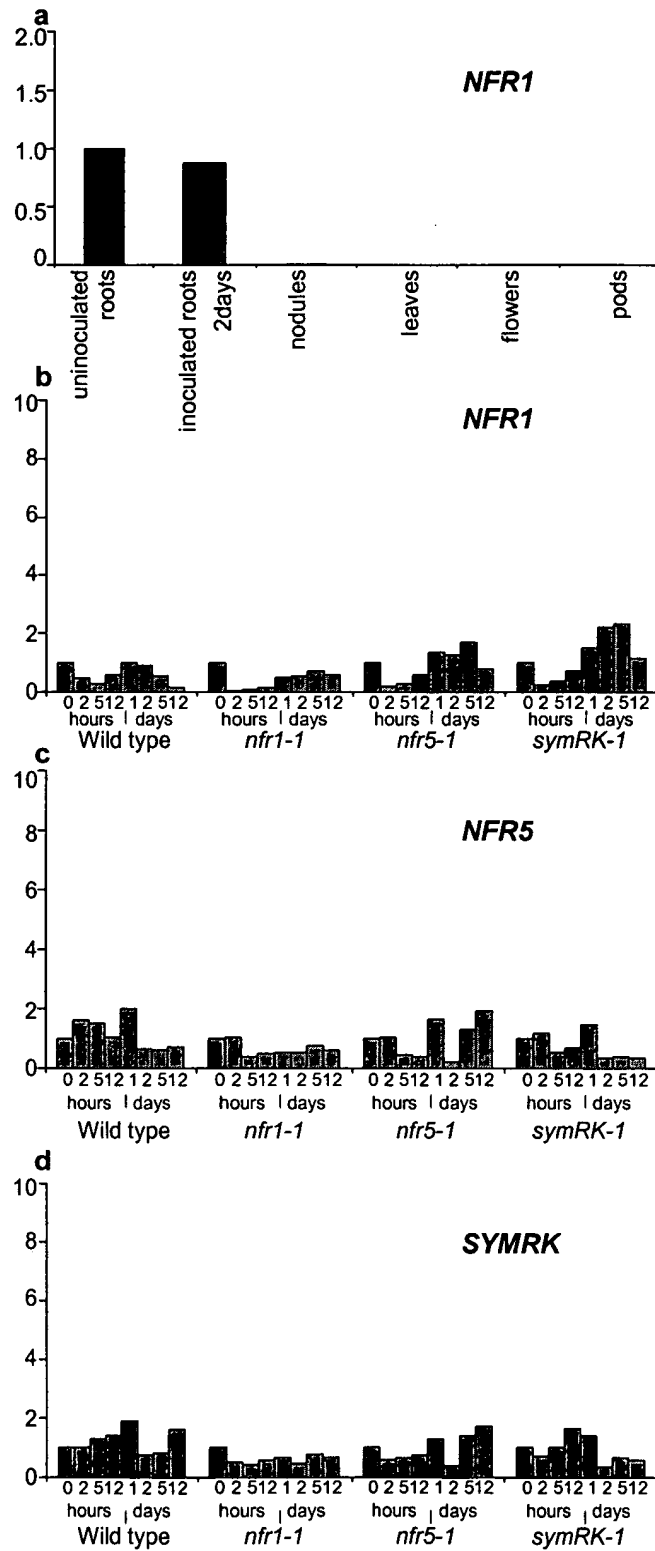


Figure 8

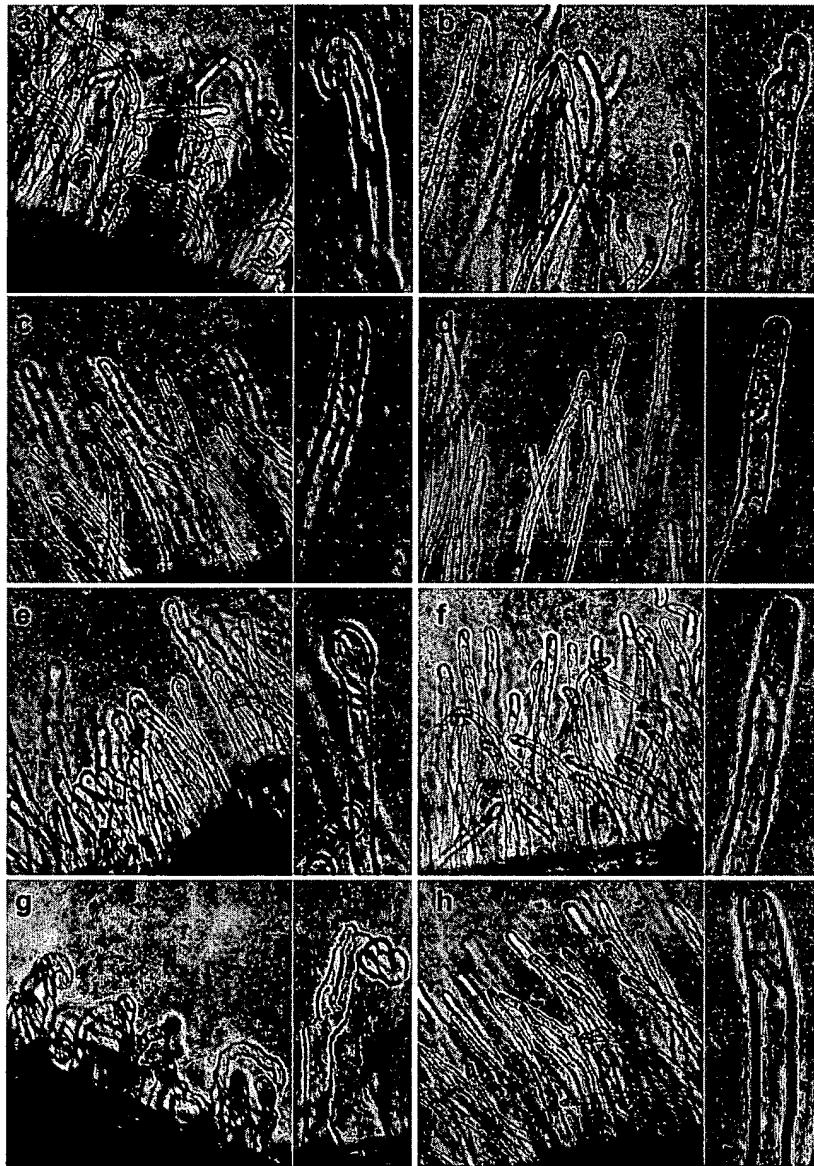
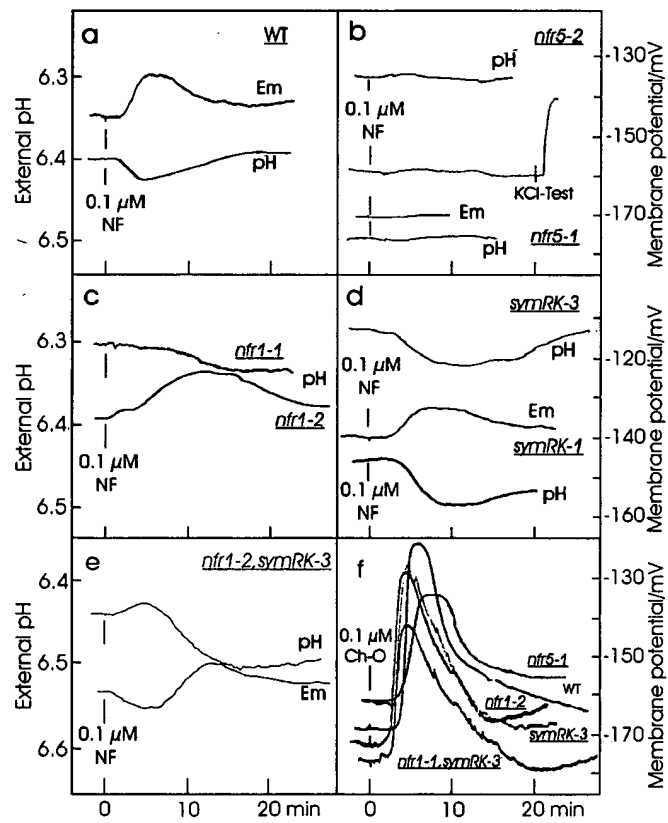


Figure 9



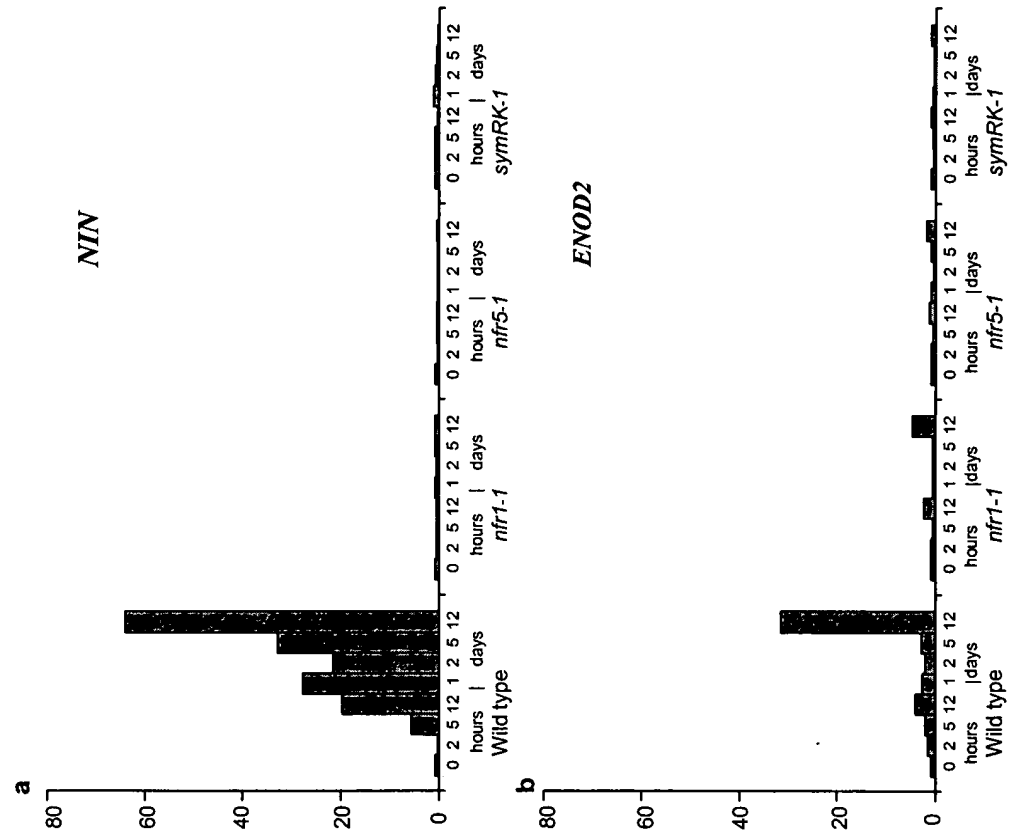


Figure 11

NFR1 1: **NK...LKTG.LLFFFI.LLGHVCFHVESNCLKG....C...D...LALASYIL....FGVFILQNTITTFMOSEIVSNDAITSYNKDKILNDINIQSFQRL**
NFR5 1: **MAVFFLTSCSLSLFLALTLFTNIAARSEKISCPDFSCPVDSPPSCETVYTYAQSENLLSLTINISDFIDISPLSIARAS...NIDACK.DKLVPG.QVL**

NFR1 85: **NIFFPDCIGGEFLGHVFEYSASKGDTYETIANLYANLTTVDLLKRFN.SYDEKNIPEVNAKVNVTVNCSCGNS.QVSKDYGLFITVYPIRPGDPTLQDIAN**
NFR5 96: **LVEVTCCGACGNHSSANT.SYQIQGDSYDFVATTIYENLTNNWNIQASNPGVNEFYLLPERVKVVFPLFCRCPSKNQLNKGIQYLITYVWKENDNVSLVSA**

NFR1 183: **QSSLDAGLIQSFN.PSVNFSKDSGI.AFIPGRYKNGVVPLYHRTAGLASGAAVGISTAGTFVLLLLAFQMVVRYQKKEEKAKLPDTISMAILSTQDASS**
NFR5 195: **KFGASPADILTENRYGQDETAATNLPILIP...VT..QLPELTQPS...SNGRKS..SIHLLVILGITLGCITLL.TAVLTGTLVYVYCRKKALN.RTASS**

NFR1 281: **SABYETSGSGPGTASATGLTSIMVAKSMEFSYQELAKATNNFSLDNKICQGGFGAVVYAEELRGKKTAKKMDVQASTEFCLCELVLTTHVHELNIVRLIG**
NFR5 283: **AETADKLLSG.....VSGY....VSKPNVYEIDEIMEATKDFSECKVGES....VYKANIEGRVVAVKKIKEGGANE...ELKILQKVNHFGNLVKLMG**

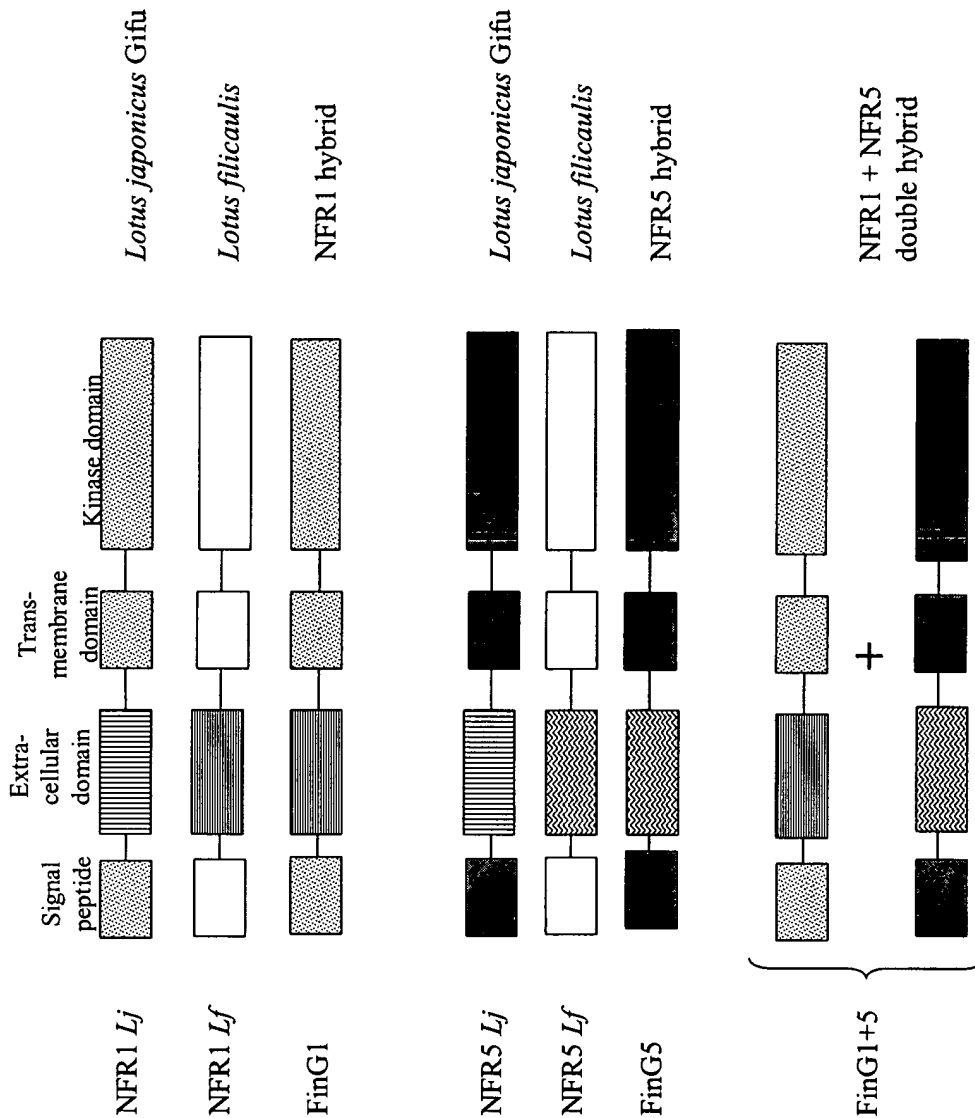
NFR1 381: **YC..VEGSLFLVVEHIDNGNLGOYLHG.SGKEP..LPWSSRVQIALDAARGLEVIHEHTVPVYIHRDVKSANILIDKNLRGKVADFGLTKLIEVGNSTLQ**
NFR5 367: **VSSGYDCNCFLVYEYAENGSLAEWLFSKSSGTPNSLTWSORISIAVDVAVGLQVMEHTYPRIIHRDITTSNILLDSTFKAKIANFAMAR.....TST..**

NFR1 476: **TRLVGTFGYMPPEYAYQYGDISP KIDVYAFGVVLFELISAKNAVL..KTGELVAESKGLVALFEEALNKSDPCDALRKLVDPRLGENYPIDSVLEKIAQLGR**
NFR5 459: **.....NP.....MMPKIDVFAFGVLLIELLTGRKAMTTKENGGEVVMWLKMDWEIEDIENR...BERIRKWMDPNLESFYHIDNALSIASLAV**

NFR1 574: **ACTRDNPILRPSMRSLVVALMTLSLTEDCDDSESYES.....QTLINLLSVR**
NFR5 540: **NCTADKSLSRPSMAEIVLSLFTQQSSNPITLERSLTSSGLDVEDDAHIVTSITAR**

Figure 12

Protein domain structure of *Lotus japonicus* and *Lotus filicaulis* NFR1 and NFR5 proteins and of the hybrid proteins



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